

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Each of claims 3, 7, 14, 18, 25 and 26 has been amended to be rewritten in independent form to include all of the limitations of its parent claim and any intervening claim.

No new matter has been added and no new issues have been raised which require further consideration on the merits and/or a new search. Accordingly, it is respectfully requested that the amendments to the claims be approved and entered under 37 CFR 1.116.

CLAIM FEE

The application has previously contained 36 claims of which 3 were independent, and the appropriate claim fee was paid for such claims. The application now contains 17 claims, of which 6 are independent. Accordingly, a claim fee in the amount of \$630.00 for the addition of 3 extra independent claims is attached hereto. In addition, authorization is hereby given to charge any additional fees which may be determined to be required to Account No. 06-1378.

THE PRIOR ART REJECTION

Claims 1-36 were rejected under 35 USC 103 as being obvious in view of the combination of USP 6,639,657 ("Baer et al") and USP 4,842,782 ("Portney et al").

The Cited References

The disclosure of Baer et al and Portney et al is addressed on pages 2-5 of the Response filed on October 11, 2007.

The Examiner's Response to Arguments

A. The Objective Lens 360 of Baer et al

In the Response filed on October 11, 2007, it was pointed out that while Baer et al does disclose that a lens (such as lens 350) may be provided on the path of laser light to the sample, the objective lens 360 of Baer et al is not positioned on a path of light to a sample, and therefore does not guide laser light to the sample and cannot be "positioned between the active optical element and the sample" as recited in claim 1 and 23 or "positioned between the pattern forming means and the sample" as recited in claim 12.

In response, the Examiner again points to objective lens 360 of Baer et al, and the Examiner emphasizes the disclosure at column 6, lines 38-39 of Baer et al that "[t]he laser beam 310

then passes through an objective lens 360 and is then reflected."

Based on this disclosure of Baer et al, the Examiner asserts that "the laser light does pass through the objective lens." It is respectfully pointed out that this statement by the Examiner incorrectly paraphrases the claim language and does not address the structure recited in previously presented claims 1 and 12 and the method recited in previously presented in claim 23.

That is, according to previously presented claim 1, the objective lens is positioned between the active optical element and the sample, and the laser light is guided to the sample by the objective lens. Similarly, according to previously presented claim 12, the objective lens is positioned between the pattern forming means and the sample, and the laser light is guided to the sample by the objective lens. Moreover, according to previously presented claim 23, the laser light is guided from the active optical element to the sample via an objective lens positioned between the active optical element and the sample.

By contrast, even according to the portion of Baer et al cited by the Examiner on page 3 of the Final Office Action, the laser beam path 310 reaches the objective lens after passing through the sample ("[t]he laser beam path 310 then passes downward toward the microcentrifuge cap 120. The laser beam path 310 then passes through an objective lens 360 and is then

reflected"). Moreover, after the laser beam path is reflected, it passes to the ocular 370 via a cut-off filter 390. This structure of Baer et al is clearly illustrated in Fig. 3 of Baer et al.

Even if Baer et al were combinable with Portney et al and even if Portney et al could be interpreted as disclosing an active optical element, as suggested by the Examiner, the mask of Portney et al would necessarily be positioned on the laser beam path 310 before the laser beam path reaches the sample.

Accordingly, the objective lens 360 of Baer et al is clearly not positioned between the active optical element and the sample, and clearly is not positioned to guided laser light to the sample.

Thus, the objective lens 360 of Baer et al does not at all correspond to the structure of the objective lens recited in previously presented claims 1, 12 and 23, contrary to the Examiner's assertion on page 3 of the Final Office Action.

It is noted that claim 1 (including the subject matter relating to the objective lens) has been incorporated into claims 3 and 7, claim 12 (including the subject matter relating to the objective lens) has been incorporated into claims 14 and 18, and claim 23 (including the subject matter relating to the objective lens) has been incorporated into claims 25 and 26.

Accordingly, it is respectfully submitted that the objective lens 360 of Baer et al does not at all correspond to the structure of the objective lens now recited in amended independent claims 3, 7, 14, 18, 25 and 26.

B. The Active Optical Element

On page 3 of the Final Office Action, the Examiner asserts, in response to the arguments set forth in the Response filed on October 11, 2007, that Portney et al does not disclose, teach or suggest the setting of a variable pattern, or an active optical element, "[t]he examiner respectfully disagrees because the disclosed mask [of Portney et al] is fully capable of these functions."

In particular, the Examiner states "[a]pplicant argues that the pattern is fixed by the mask. The examiner respectfully notes that if the mask is shifted or changed out the pattern changes, thus the prior art does teach different positioning."

It is respectfully pointed out that moving a mask of Portney et al does not change the pattern on the mask itself, but rather merely changes the location of the mask. That is, "shift[ing]" a mask with a fixed pattern, as suggested by the Examiner, merely shifts the mask with the fixed pattern to a different location. In any event, it is respectfully pointed out that Portney et al

does not actually disclose "shift[ing]" the masks thereof. And as explained in the Response filed on October 11, 2007, Portney et al merely discloses that each mask has a fixed pattern, and does not disclose or suggest that any mask thereof is an "active" optical element or can be set with a "variable" pattern.

It is respectfully submitted, moreover, that by asserting that one could change the masks of Portney et al to change the pattern ("if the mask is ... changed out the pattern changes"), the Examiner implicitly acknowledges that Portney et al does not disclose an "active" optical element on which a "variable" pattern is formed. That is, it is respectfully submitted that a plurality of optical elements each having fixed patterns does not correspond to an "active" optical element or an element on which a "variable" pattern set to correspond to a necessary area is formed.

Moreover, it is respectfully submitted that, as explained at pages 6-9 of the Response filed on October 11, 2007, none of masks 22, 32 and 48 of Portney et al is an active optical element as previously recited in claims 1 and 23. In addition, it is respectfully submitted that Portney et al does not disclose or suggest that any of masks 22, 32 and 48 has a variable pattern formed thereon, or that such a variable pattern is set to correspond to a necessary area, as previously recited in claim 1

and 23. Accordingly, it is respectfully submitted that Portney et al clearly does not disclose, teach or suggest an active optical element as previously recited in independent claims 1 and 23. And it is respectfully submitted that Portney et al clearly does not disclose or suggest pattern forming means for transmitting or reflecting laser light selectively in accordance with a variable pattern, wherein the variable pattern is set to correspond to a necessary area as previously recited in claim 12.

It is noted that claim 1 has been incorporated into claims 3 and 7, claim 12 has been incorporated into claims 14 and 18, and claim 23 has been incorporated into claims 25 and 26. Accordingly, it is respectfully submitted that even the combination of Portney et al with Baer et al does not disclose the structure now recited in amended independent claims 3, 7, 14, 18, 25 and 26.

The Amended Independent Claims Recite Structure Not Disclosed or
Suggested by the Cited References

A. Amended Independent Claim 3

Claim 3 has been amended to be rewritten in independent form, and includes all of the subject matter of its parent claim 1 and intervening claim 2.

As pointed out hereinabove, even if considered in combination, Baer et al and Portney et al do not disclose, teach or suggest an active optical element on which a variable pattern set to correspond to a necessary area is formed, as recited in amended independent claim 3. It is also noted that, as pointed out hereinabove, the objective lens 360 of Baer et al does not correspond to the objective lens recited in claim 3.

Moreover, according to amended independent claim 3, the apparatus further comprises: a pattern image projection optical system, which projects an image of the pattern formed on the active optical element onto the sample (as previously recited in claim 2), and an observation optical system, which acquires an observation image of the sample.

Thus, according to amended independent claim 3, an image of the pattern formed on the active optical element is projected by the pattern image projection optical system onto the sample, and an observation image of the sample is acquired by the observation optical system. With this structure, an observation image can be acquired of the sample while the image of the pattern is projected on the sample. The structure of claim 3 can thereby enable the user to set a shape and/or position of the pattern with respect to the sample while viewing the acquired observation image (see, for example, dependent claims 4 and 5).

As explained hereinabove and in the Response filed on October 11, 2007, Portney et al merely discloses a mask having a fixed shape. It is respectfully submitted, therefore, that even if the combination of Baer et al and Portney et al suggested by the Examiner were considered to be reasonable, the structural features and advantageous effects of the present invention as recited in amended independent claim 3 still would not be achieved or rendered obvious.

It is noted, moreover, that the Examiner has not specifically addressed claim 3 in the Final Office Action.

In view of the foregoing, it is respectfully submitted that amended independent claim 3, and claims 4, 5, 30, 32 and 33 depending therefrom, all clearly patentably distinguish over Baer et al and Portney et al, under 35 USC 103.

B. Amended Independent Claim 7

Claim 7 has been amended to be rewritten in independent form, and includes all of the subject matter of its parent claim 1.

As pointed out hereinabove, even if considered in combination, Baer et al and Portney et al do not disclose, teach or suggest an active optical element on which a variable pattern set to correspond to a necessary area is formed, as recited in

amended independent claim 7. It is also noted that, as pointed out hereinabove, the objective lens 360 of Baer et al does not correspond to the objective lens recited in claim 7.

Moreover, according to amended independent claim 7, the laser light irradiation optical system further comprises a relay lens which is removably inserted into an optical path between the active optical element and the objective lens, and a relay lens insertion/removal mechanism to insert and remove the relay lens into and from the optical path.

In addition, according to amended independent claim 7, when the relay lens is inserted in the optical path, the active optical element forms the pattern corresponding to the necessary area, and the laser light irradiation optical system selectively irradiates the part of the sample excluding the necessary area with the laser light in accordance with the pattern formed on the active optical element.

Still further, according to amended independent claim 7, when the relay lens is removed from the optical path, the laser light irradiation optical system converges a beam of laser light by the objective lens to irradiate the sample with the converged beam.

With this structure, a state of irradiating laser light to a sample is selectable by inserting or removing the relay lens.

When the relay lens is inserted, the laser light irradiation optical system irradiates the sample in accordance with the pattern formed on the active optical element. On the other hand, when the relay lens is removed from the optical path, the sample is irradiated with the converged beam. The converged beam may, for example, cause the irradiated part of the sample to evaporate, as recited in dependent claim 8.

The structure recited in claim 7 therefore can enable the user to select the power density of the laser light irradiated to the sample.

The Examiner has not specifically addressed claim 7 in the Final Office Action. And it is respectfully submitted that neither Baer et al nor Portney et al disclose, teach or suggest the structure recited in amended independent claim 7. Indeed, Baer et al and Portney et al do not disclose, teach or suggest a mechanism or structure that allows selection of a state of the laser light irradiation as recited in amended independent claim 7.

In view of the foregoing, it is respectfully submitted that amended independent claim 7, and claims 8 and 9 depending therefrom, all clearly patentably distinguish over Baer et al and Portney et al, under 35 USC 103.

C. Amended Independent Claim 14

Claim 14 has been amended to be rewritten in independent form, and includes all of the subject matter of its parent claim 12 and intervening claim 13.

As pointed out hereinabove, even if considered in combination, Baer et al and Portney et al do not disclose, teach or suggest pattern forming means for transmitting or reflecting laser light selectively in accordance with a variable pattern which is set to correspond to a necessary area, as recited in amended independent claim 14. It is also noted that, as pointed out hereinabove, the objective lens 360 of Baer et al does not correspond to the objective lens recited in claim 14.

Moreover, according to amended independent claim 14, the apparatus further comprises: a pattern image projection optical system, which projects an image of the pattern formed by the pattern forming means onto the sample (as previously recited in claim 13), and an observation optical system, which acquires an observation image of the sample.

Thus, according to amended independent claim 14, an image of the pattern formed by the pattern forming means is projected by the pattern image projection optical system onto the sample, and an observation image of the sample is acquired by the observation

optical system. With this structure, an observation image can be acquired of the sample while the image of the pattern is projected on the sample. The structure of claim 14 can thereby enable the user to set a shape and/or position of the pattern with respect to the sample while viewing the acquired observation image (see, for example, dependent claims 15 and 16).

As explained hereinabove and in the Response filed on October 11, 2007, Portney et al merely discloses a mask having a fixed shape. It is respectfully submitted, therefore, that even if the combination of Baer et al and Portney et al suggested by the Examiner were considered to be reasonable, the structural features and advantageous effects of the present invention as recited in amended independent claim 14 still would not be achieved or rendered obvious.

It is noted, moreover, that the Examiner has not specifically addressed claim 14 in the Final Office Action.

In view of the foregoing, it is respectfully submitted that amended independent claim 14, and claims 15 and 16 depending therefrom, all clearly patentably distinguish over Baer et al and Portney et al, under 35 USC 103.

D. Amended Independent Claim 18

Claim 18 has been amended to be rewritten in independent form, and includes all of the subject matter of its parent claim 12.

As pointed out hereinabove, even if considered in combination, Baer et al and Portney et al do not disclose, teach or suggest pattern forming means for transmitting or reflecting laser light selectively in accordance with a variable pattern which is set to correspond to a necessary area, as recited in amended independent claim 18. It is also noted that, as pointed out hereinabove, the objective lens 360 of Baer et al does not correspond to the objective lens recited in claim 18.

Moreover, according to amended independent claim 18, the laser light irradiation optical system further comprises a relay lens, which is removably inserted into an optical path between the pattern forming means and the objective lens, and a relay lens insertion/removal mechanism, which inserts and removes the relay lens into and from the optical path.

In addition, according to amended independent claim 18, when the relay lens is inserted in the optical path, the pattern forming means forms the pattern corresponding to the necessary area, and the laser light irradiation optical system selectively irradiates the part of the sample excluding the necessary area

with the laser light in accordance with the pattern formed on the pattern forming means.

Still further, according to amended independent claim 18, when the relay lens is removed from the optical path, the laser light irradiation optical system converges a beam of laser light by the objective lens to irradiate the sample with the converged beam.

With this structure, a state of irradiating laser light to a sample is selectable by inserting or removing the relay lens. When the relay lens is inserted, the laser light irradiation optical system irradiates the sample in accordance with the pattern formed by the pattern forming means. On the other hand, when the relay lens is removed from the optical path, the sample is irradiated with the converged beam. The converged beam may, for example, cause the irradiated part of the sample to evaporate, as recited in dependent claim 19.

The structure recited in claim 18 therefore can enable the user to select the power density of the laser light irradiated to the sample.

The Examiner has not specifically addressed claim 18 in the Final Office Action. And it is respectfully submitted that neither Baer et al nor Portney et al disclose, teach or suggest the structure recited in amended independent claim 18. Indeed,

Baer et al and Portney et al do not disclose, teach or suggest a mechanism or structure that allows selection of a state of the laser light irradiation as recited in amended independent claim 18.

In view of the foregoing, it is respectfully submitted that amended independent claim 18, and claims 19 and 20 depending therefrom, all clearly patentably distinguish over Baer et al and Portney et al, under 35 USC 103.

E. Amended Independent Claim 25

Claim 25 has been amended to be rewritten in independent form, and includes all of the subject matter of its parent claim 23 and intervening claim 24.

As pointed out hereinabove, even if considered in combination, Baer et al and Portney et al do not disclose, teach or suggest forming a variable pattern on an active optical element such that the pattern is set to correspond to a necessary area of a sample, as recited in amended independent claim 25. It is also noted that, as pointed out hereinabove, the objective lens 360 of Baer et al does not correspond to guiding the laser light from the active optical element to the sample via an objective lens positioned between the active optical element and the sample, as recited in amended independent claim 25.

Moreover, according to amended independent claim 25, the method further comprises: projecting an image of the pattern formed on the active optical element onto the sample; obtaining an observation image of the sample; and setting the pattern formed on the active optical element based on the obtained observation image.

Thus, according to amended independent claim 25, an image of the pattern formed on the active optical element is projected onto the sample, and an observation image of the sample is acquired. And according to amended independent claim 25, the pattern formed on the active optical element is set based on the obtained observation image. Thus, for example, the user may set a shape and/or position of the pattern with respect to the sample while viewing the acquired observation image.

As explained hereinabove and in the Response filed on October 11, 2007, Portney et al merely discloses a mask having a fixed shape. It is respectfully submitted, therefore, that even if the combination of Baer et al and Portney et al suggested by the Examiner were considered to be reasonable, the structural features and advantageous effects of the present invention as recited in amended independent claim 25 still would not be achieved or rendered obvious.

Indeed, it is noted that the Examiner has not specifically addressed claim 25 in the Final Office Action, and it is respectfully submitted that Baer et al and Portney et al clearly fail to disclose, teach or suggest, projecting an image of the pattern formed on the active optical element onto the sample; obtaining an observation image of the sample; and setting the pattern formed on the active optical element based on the obtained observation image, as recited in amended independent claim 25.

In view of the foregoing, it is respectfully submitted that amended independent claim 25 clearly patentably distinguishes over Baer et al and Portney et al, under 35 USC 103.

F. Amended Independent Claim 26

Claim 26 has been amended to be rewritten in independent form, and includes all of the subject matter of its parent claim 23.

As pointed out hereinabove, even if considered in combination, Baer et al and Portney et al do not disclose, teach or suggest forming a variable pattern on an active optical element such that the pattern is set to correspond to a necessary area of a sample, as recited in amended independent claim 26. It is also noted that, as pointed out hereinabove, the objective

lens 360 of Baer et al does not correspond to guiding the laser light from the active optical element to the sample via an objective lens positioned between the active optical element and the sample, as recited in amended independent claim 26.

Moreover, according to amended independent claim 26, the part of the sample excluding the necessary area is selectively irradiated with the laser light in accordance with the pattern formed on the active optical element, and the selective irradiation of the laser light is repeatedly performed while changing positions on the sample that are irradiated to irradiate all desired positions on the sample.

And according to amended independent claim 26, the method further comprises converging a beam of the irradiated laser light onto a beam spot on the sample, and relatively moving the beam spot of the converged beam of laser light with respect to the sample completely around an area to be collected including the necessary area, wherein a part of the sample irradiated with the converged beam of laser light is evaporated, such that the area to be collected including the necessary area is cut from the sample.

It is noted that the Examiner has not specifically addressed claim 26 in the Final Office Action. And it is respectfully submitted that Baer et al and Portney et al clearly fail to

disclose, teach or suggest the method recited in amended independent claim 26, which includes both (i) repeatedly selectively irradiating the sample with the laser light in accordance with the pattern formed on the active optical element, while changing positions on the sample that are irradiated to irradiate all desired positions on the sample, and (ii) converging a beam of the irradiated laser light onto a beam spot on the sample, and relatively moving the beam spot of the converged beam of laser light with respect to the sample completely around an area to be collected including the necessary area, wherein a part of the sample irradiated with the converged beam of laser light is evaporated, such that the area to be collected including the necessary area is cut from the sample.

In view of the foregoing, it is respectfully submitted that amended independent claim 26 clearly patentably distinguishes over Baer et al and Portney et al, under 35 USC 103.

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In view of the foregoing, it is respectfully submitted that even if Portney et al were combinable with Baer et al in the manner suggested by the Examiner, amended independent claims 3, 7, 14, 18, 25 and 26, and all of the claims respectively depending therefrom, still would not be achieved or rendered

obvious. Accordingly, it is respectfully submitted that all of the claims set forth hereinabove clearly patentably distinguish over Baer et al and Portney et al under 35 USC 103.

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

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